

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 101 of the)	WT Docket No. 07-54
Commission's Rules to Modify Antenna)	RM-11043
Requirements of the 10.7 – 11.7GHz Band)	

COMMENTS OF CONTERRA ULTRA BROADBAND, LLC

John J. La Penta
Senior Vice President and General Counsel
Conterra Ultra Broadband, LLC
2101 Rexford Road, Suite 200E
Charlotte, NC 28211
(704) 365-6701

Michael B. Hazzard
Womble Carlyle Sandridge & Rice, PLLC
1401 Eye Street, NW, Seventh Floor
Washington, DC 20005
(202) 857-4540

Counsel to Conterra Ultra Broadband, LLC

May 25, 2007

TABLE OF CONTENTS

I.	INTRODUCTION AND SUMMARY	1
11.	CONTERRA SUPPORTS THE MODIFICATION OF SECTION 101 OF THE COMMISSION’S RULES TO PERMIT INSTALLATION OF SMALLER ANTENNAS BY FS OPERATORS IN THE 11 GHz BAND	4
111.	MODIFYING THE RULES TO PERMIT THE INSTALLATION OF SMALLER ANTENNAS BY FS PROVIDERS WILL ACHIEVE THE FCC’S STATED GOALS AND ARE IN THE PUBLIC INTEREST	7
A.	Modification is consistent with the FCC’s Past Decisions	7
B.	Modification of the Rules Promotes Efficient Use of the 11 GHz Band	8
C.	Other Users in the 11 GHz Band Will Experience Minimal Interference	10
IV.	CONCLUSION	11

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Amendment of Part 101 of the)	WT Docket No. 07-54
Commission's Rules to Modify Antenna)	RM-11043
Requirements of the 10.7 – 11.7GHz Band)	

COMMENTS OF CONTERRA ULTRA BROADBAND, LLC

Conterra Ultra Broadband, LLC (“Conterra”) respectfully submits these comments in response to the Federal Communications Commission’s (“FCC” or “Commission”) *Public Notice* released on March 27, 2007 in the above referenced docket. In its Notice of Proposed Rulemaking (“NPRM”), the Commission seeks comment on modifying the Commission’s ~~Part~~ 101 Rules to permit the installation of smaller antennas by Fixed Service (“FS”) operators in the 10.7–11.7 GHz (“11 GHz”) band,¹ specifically relating to whether modifications would serve the public interest by facilitating the efficient use of the 11 GHz band while protecting other users in the band from interference due to the use of smaller antennas.

I. INTRODUCTION AND SUMMARY

The FCC’s microwave service rules establish directional antenna standards that are designed to maximize the use of the microwave spectrum, in this case the 11 GHz band, while avoiding interference among operators. Despite the absence of specifically mandated antenna size, there are technical parameters – such as maximum beamwidth, minimum antenna gain, and minimum radiation suppression – that given the state of technology at the time of the Rule’s

¹ See 47 C.F.R. §§ 101.103, 101.115(b).

establishment limited operators to a minimum antenna size of 1.22 Meters (four feet).² The technical specifications now in place are based on the technical sophistication of communications equipments and the needs of band users at the time of adoption many years ago. Today, the technical sophistication of communications equipment and needs of various users of the band have evolved to make smaller antennas possible, but the Commission's current rules preclude deployment.³ In the 10 GHz band, the Commission went through the administrative process of a Notice of Proposed Rulemaking, similar to what is now under consideration for the 11 GHz band, to amend and impose new specifications that created new technical requirements allowing smaller antennas in the 10 GHz band.⁴ Conterra is not aware of any complaints of interference from the new requirements imposed on the 10 GHz band, and none should be expected in the 11 GHz band.

In 2004, FiberTower, Inc. petitioned with proposed changes to the technical parameters to allow operators to use smaller 0.61 Meter (two foot) FS antennas. The proposed changes included allowing operators to use smaller FS antennas that have reduced mainbeam gain (33.5 dBI), increased beamwidth (3.5 degrees), and modified sidelobe suppression requirements for the

² See, e.g., Amendment of Part 101 of the Commission's Rules to Modify Antenna Requirements for the 10.7–11.7 GHz Band, *Notice of Proposed Rulemaking*, WT Docket No. 07-54, RM-11043 (2007).

³ See, e.g., Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, WT Docket 94-148, 15 FCC Rcd 3129 (2000).

⁴ See, e.g., Reorganization and Revision of Parts 1, 2, 21, and 94 of the Rules to Establish a New Part 101 Governing Terrestrial Microwave Fixed Radio Services, *Memorandum Opinion and Order and Notice of Proposed Rulemaking*, WT Docket 94-148, 15 FCC Rcd 3129 (2000) (requesting comment on proposal to permit smaller antennas in the 10 GHz band); Amendment of Part 101 of the Commission's Rules to Streamline Processing of Microwave Applications in the Wireless Telecommunications Services, WT Docket 00-19, *Report and Order*, 17 FCC Rcd 15040 (2002) (amending rules to allow the use of smaller antennas in the 10 GHz band).

11 GHz band.⁵ FiberTower further proposed amending Section 101.103 of the Commission's Rules to add two paragraphs to ensure smaller antennas do not disadvantage satellite earth stations or FS stations with longer antennas. The Commission, in the *FiberTower Order*, granted a waiver of the present rules based on their findings that allowing the installation of 0.61 Meter antennas in the 11 GHz band facilitates the efficient and effective use of the spectrum while the conditions imposed still protect licensees operating in the 11 GHz band. At present, however, FiberTower is the only carrier that benefits from this waiver.

The FCC microwave rules also establish coordination procedures and interference standards applicable to the operation of FS antennas in the 11 GHz band. The use of smaller antennas would result in more radio frequency energy being transmitted in directions away from the actual point-to-point link. The Fiber Tower proposal included possible coordination rules placing the burden that may arise from the use of these smaller antennas on the parties choosing to use these smaller antennas.

Finally, the 11 GHz band is allocated within the United States on a co-primary basis to the FS, licensed under Part 101 of the Commission's Rules, and to the Fixed Satellite Service (FSS), licensed under Part 25 of the Commission's Rules.⁶ Specifically, in the United States, the 11 GHz band is used by the FS for Local Television Transmission Service ("LTTS"), Microwave Business, Microwave Public Safety, and Common Carrier Fixed Point-to-Point operations. Although the 11 GHz band is allocated internationally for FSS on a primary basis, the use of the FSS downlink band at 11 GHz is limited, within the United States, to international systems, *i.e.*,

⁵ See FiberTower, Inc., Petition for Rulemaking, Appendix (filed July 14, 2004) (*FiberTower Petition*).

⁶ 47 C.F.R. Part 25.

other than domestic systems.⁷ The Commission's explanation for the more restrictive allocation of spectrum domestically compared to the international allocation of spectrum is the need to protect and permit the growth of substantial incumbent FS operations and licensees.* The Commission has recognized, at least tentatively, that the above-mentioned allocation does not preclude the FCC from facilitating the efficient use of the band by permitting FS operators to deploy smaller antennas while protecting other users in the band from the harmful interference that is associated with the use of the smaller antennas. That conclusion is correct, and the Commission should codify it in its rules.

11. CONTERRA SUPPORTS THE MODIFICATION OF SECTION 101 OF THE COMMISSION'S RULES TO PERMIT INSTALLATION OF SMALLER ANTENNAS BY FS OPERATORS IN THE 11 GHZ BAND

The Commission articulated the need to consider modification to the Commission's Rules to permit the installation of smaller antennas in the 11 GHz band. In considering modification of the Rules, the Commission stated concerns included: (1) the efficient use of the 11 GHz band; (2) facilitating a range of fixed microwave applications not currently accommodated in the 11 GHz band; and (3) protecting other users in the 11 GHz band from interference. As noted in Conterra's waiver petition, which has been pending since January 22, 2007, modifications of the Commission's rules is necessary to improve efficiency and facilitate new applications in the 11 GHz band. Moreover, experience under the *FiberTower Order* demonstrates this can be done with little if any risk of interference.

⁷ See 47 C.F.R. § 2.106, NG104 (stating that "[t]he use of the bands 10.7-11.7 GHz (space to Earth)...by the fixed satellite service in the geostationary-satellite orbit shall be limited to international systems, *i.e.*, other than domestic systems").

⁸ See, e.g., Establishment of Policies and Service Rules for the Non-Geostationary Satellite Orbit, Fixed Satellite Service in the Ku-Band, *Notice of Proposed Rulemaking*, IB Docket No. 01-96, 16 FCC Rcd 9680, 9684 P10.

The Commission recognized in the *FiberTower Order* that “...the installation of 0.61 Meter antennas in the 11 GHz band, pursuant to terms and conditions set forth...[in the *FiberTower Order*], will facilitate the use of the 11 GHz band while providing interference requirements and procedures to appropriately protect licensees operating in the band.”⁹ Further, the Commission has already stated, in the *FiberTower Order*, that waiver or modification of Sections 101.103 and 101.115 of the existing Commission Rules is in the public interest and consistent with the Commission’s goals of facilitating wireless broadband deployment by alleviating scarcity in the local loop, reducing cost of providing 11 GHz service improving the use of the limited tower space available for antennas, and improving spectrum efficiency in the short term.

After the *FiberTower Petition* was placed on public notice for comment, on July 23, 2004,¹⁰ the Commission received five comments, two reply comments, and a number of *ex parte* filings.¹¹ These responses represented the views of equipment manufacturers,¹² associations

⁹ See In the Matter of FiberTower Inc. Petition for Waiver of Sections 101.103 and 101.115 of the Commission’s Rules for the Use of 0.61 Meter Antennas in the 10.7 – 11.7 GHz Band, *Order*, 21 FCC Rcd. 6386, 112 (rel. June 6, 2006) (“*FiberTower Order*”); see also Wireless Communications Association International, Inc., Comments, at 2, (filed Feb. 3, 2005); Fixed Wireless Communications Coalition, Comments at 1-2 (filed Feb. 3, 2005) (FWCC Comments); see Letter from Michael E. McCormick, Program Manager, Cingular Wireless, to Magalie Salas, Secretary, FCC (filed Jan. 12, 2005; dated Dec. 15, 2004) (“Cingular Letter”).

¹⁰ Consumer & Governmental Affairs Bureau Reference Information Center Petition for Rulemaking Filed, *Public Notice*, Report No. 2666 (July 23, 2004).

¹¹ See Alcatel, Comments (filed Aug. 23, 2004); Comsearch, Comments (filed Aug. 23, 2004); FWCC, Comments (filed Aug. 23, 2004); NextWeb, Inc., Comments (filed Aug. 12, 2004); Satellite Industry Association, Opposition (filed Aug. 23, 2004) (“SIA Comments”); Alcatel, Reply Comments (filed Sept. 4, 2004); FiberTower, Inc., Reply Comments (filed Sept. 7, 2004); Harris Corporation, *Ex Parte* Comments (filed July 25, 2005); DragonWave, Inc., *Ex Parte* Comments (filed Nov. 14, 2005); Cingular Letter.

¹² See Alcatel Comments; Alcatel Reply Comments; FiberTower Reply Comments; Harris *Ex Parte* Comments; DragonWave *Ex Parte* Comments; see also SIA Comments; FWCC Comments.

representing the fixed microwave community¹³ or the satellite industry,¹⁴ and a frequency coordinator specializing in spectrum management of terrestrial microwave, satellite, and mobile telecommunications systems.¹⁵ There was only one commenting party opposed to the FiberTower Petition.¹⁶ Thus, virtually across the board in a wide range of industries involved with the 11 GHz band, there is consensus in support of amendments to the Commission's Rules to permit the use of 0.61 Meter FS antennas in the 11 GHz band.¹⁷ Moreover, history has proved the consensus position correct.

As explained in essentially all of the filed comments and *ex parte* letters, the smaller antennas cost less to manufacture distribute, install and maintain,¹⁸ and these smaller and less heavy antennas would encourage installation of FS antennas in locations incapable of supporting 1.22 Meter antennas.¹⁹ Additionally a number of responses argued that the opportunity to use smaller antennas, 0.61 Meter, in the 11 GHz band promotes efficient use of the spectrum.²⁰ There can be no doubt that this is sound policy.

¹³ See FWCC Comments. FWCC is a coalition of companies, associations, and individuals with interests in terrestrial fixed microwave communications, including manufacturers, licensees, and communications service providers.

¹⁴ See SIA Comments.

¹⁵ See Comsearch Comments.

¹⁶ See SIA Comments.

¹⁷ See generally Alcatel Comments; Alcatel Reply Comments; FWCC Comments; NextWeb Comments; Harris Comments; DragonWave Comments; *see also* Comsearch Comments at 2.

¹⁸ See Alcatel Comments at 1-2; FWCC Comments at 2; Harris Comments at 1-2; DragonWave Comments at 1-2.

See FWCC Comments at 1-2; Harris Comments at 2; Alcatel Comments at 1-2; DragonWave Comments at 1-2.

²⁰ Harris Comments at 1-2; Alcatel Comments at 1-2; FWCC Comments at 1-2; NextWeb Comments at 2; DragonWave Comments at 1-2.

Modification to the Commission's Rules would facilitate and adequately address all of the Commission's objectives and concerns. Accordingly, Conterra urges the Commission to modify Section 101 of the existing Rules to allow for the use of smaller antennas.

III. MODIFYING THE RULES TO PERMIT THE INSTALLATION OF SMALLER ANTENNAS BY FS PROVIDERS WILL ACHIEVE THE FCC'S STATED GOALS AND ARE IN THE PUBLIC INTEREST

As the Commission has already found, in the *FiberTower Order*, the modification of 101.103 and 101.115 of the Commission's Rules is clearly in the public interest and consistent with the Commission's goals of facilitating wireless broadband deployment by alleviating scarcity in the local loop, reducing costs of providing 11 GHZ service, improving the use of limited tower space available for antennas, and improving spectrum efficiency in the short term.

A. Modification is consistent with the FCC's Past Decisions

Currently, the Commission's rules often limit or frustrate efforts of carriers, such as Conterra, to provide service and cause carriers to either delay the deployment of service or incur significant cost to comply with the existing specifications. Under either situation, service delays, equipment, and network reconfiguration costs limit the deployment of services, most often in underserved communities.

In addition, at present, FiberTower – but no one else – has received the relief the Commission is contemplating in the NPRM. Modification of the FCC's existing rules to benefit all carriers, and not just FiberTower, is necessary to ensure consistency with past decisions and fairness for all carriers.

B. Modification of the Rules Promotes Efficient Use of the 11 GHz Band

1. Spectrum Efficiency

Modification of the Rules would allow for better spectrum efficiency. One of the goals declared in the Commissions 2006-2011 Strategic Plan was the promotion of the efficient and effective use of spectrum.”²¹ In granting the FiberTower Petition and by now modifying the Rules the Commission will take steps toward this goal. In the FiberTower Order the Commission even went so far as to say that the waiver of the rules was a step towards efficient spectrum use when it stated that the FiberTower Petition and modification of the Rules “promote[s] the efficient use of the spectrum by allowing FiberTower the flexibility to install 0.61 Meter antennas in the 11 GHz band to provide for a wide range of fixed microwave applications that are not currently being provided for in the 11 GHz band for both financial and aesthetic reasons.”²²

2. Scarcity

As stated by FiberTower, recent Commission decisions to promote broadband deployment through the removal of regulatory barriers, clearing of spectrum, and adoption of rules to increase competition will increase the number of broadband subscribers.²³ In the FiberTower Order, the Commission further agreed and confirmed that “it is in the public interest to facilitate the use of the 11 GHz band.”²⁴ Additionally, FS licensees have a

²¹ FiberTower Order ¶16 (citing Federal Communications Commission Strategic Plan 2006-2011 at 10).

²² *Id.*, ¶13.

²³ *Id.*, ¶6.

²⁴ *Id.*, ¶16.

special need for flexibility in the use of the 11 GHz band.²⁵ This is because in the recent past the Commission has reallocated the FS spectrum to other services and the new spectrum that has become available to FS is only suitable for short-range applications.

Many FS provides wireless broadband local backhaul service primarily educational facilities located in rural and non-urban areas, which have traditionally been users and markets underserved by national broadband carriers. Currently, the only way to practicably provide high-speed local backhaul service to these areas is via either a fiber optic network or wireless broadband. However, in most instances, fiber optic networks do not reach the rural and non-urban markets that many FS providers serves. Modifying the Commission Rules to allow for the use of 0.61 Meter antenna service is consistent with the Commission's goal of bridging the digital divide by providing an inexpensive backhaul alternative to that of laying fiber optic cable or facing the cost, space, and regulatory barriers that prevent the installation of traditional 1.22 Meter antennas.

3. Cost

The Commission recognized in the *FiberTower Order* that “the use of smaller antennas will reduce the cost of providing 11 GHz links due to the lower initial purchase cost of 0.61 Meter antennas as well as lower installation, mounting, and maintenance costs.”²⁶ Lower cost of service provision within the 11 GHz band will encourage competition not only in the fiber optic broadband marketplace, but also within the 11 GHz band. These services could or would include wireless local loop and T-1 transport and broadband Internet access.²⁷ This

²⁵

Id., ¶6 (arguing the need to reallocate FS licensees from spectrum assigned to other services has created greater pressure for those FS bands remaining that have the ability to handle reasonably long links).

²⁶ *Id.*, ¶14.

²⁷ *FiberTower Petition*, ¶4

lower cost of service provision will result in lower prices for broadband Internet access for schools, businesses and will encourage the provision of service to underserved communities.

4. Size

Currently many towers lack the space to install a 1.22 Meter dish. The cost to upgrade the towers is “costly, time-consuming, and often impractical.”²⁸ The Commission recognized that a number of comments responding to the public notice of the *FiberTower Petition* identified that “the smaller size and more modest weight of 0.61 Meter antennas will invite the installation of antennas at sites incapable of supporting 1.22 Meter antennas ... [because] they require less structural support and are subject to less wind load.”²⁹

C. Other Users in the 11 GHz Band Will Experience Minimal Interference

Only one commenter, the Satellite Industry Association, has raised concerns of interference because of the tendency of small antennas to cause and be more susceptible to interference over a smaller range since these antennas project energy over a shorter distance and because smaller antennas have less tightly focused beams.³⁰ However, in modifying the Commission’s Rules the possibility of interference is taken into account and the *FiberTower Order* explicitly stated that smaller antennas would “facilitate use of the 11 GHz band while [simultaneously] providing interference requirements and procedures to appropriately protect licensees operating in the band.”³¹ The *FiberTower Order* granting FiberTower the waiver and allowing the installation and use of smaller 0.61 Meter antennas took place in June of 2006, yet

²⁸ *FiberTower Order* ¶13.

²⁹ *Id.*, ¶14, citing FWCC Comments at 1-2; NEC Comments at 1-2; Wireless Communications Association International, Inc. Comments at 1-2; Cingular Letter at 1.

FiberTower Petition, ¶ 4 (explaining that in general antennas that are smaller have “a wider main lobe and bigger sidelobes relative to the mainlobe”). *Id.*

³¹ *FiberTower Order* ¶12

the same waiver has not been granted to any of FiberTower's competitors, such as Conterra. Today, Conterra is aware of no complaints of interference since FiberTower received its waiver.

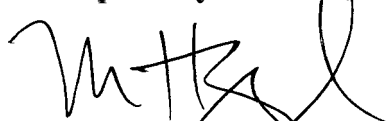
Additionally, as previously mentioned, the Commission adopted a similar standard in the 10 GHz band to allow the installation and use of smaller antennas and the Commission emphasized the undeniable benefits of aesthetics and structure loading. Added support for the likelihood that the interference would have a minimal impact on other users in the 11 GHz band was provided by Alcatel in a White Paper included in submitted Reply Comments that reported various statistics and simple calculations.³²

IV. CONCLUSION

Consistent with the comments set forth herein, the Commission should modify Part 101 of the Rules to allow installation of smaller antennas by Fixed Service (FS) operators 11 GHz band. In addition, Conterra requests that the Commission grant its waiver request pending the completion of this rulemaking.

John J. La Penta
Senior Vice President and General Counsel
Conterra Ultra Broadband, LLC
2101 Rexford Road, Suite 200E
Charlotte, NC 28211
(704) 365-6701

Respectfully submitted,



Michael B. Hazzard
Womble Carlyle Sandridge & Rice, PLLC
1401 Eye Street, NW, Seventh Floor
Washington, DC 20005
(202) 857-4540

Counsel to Conterra Ultra Broadband, LLC

May 25, 2007

³² Alcatel, Reply Comments, Exhibit A, White Paper Report on Proposed Changes to Smaller Antenna Standards in the 11 GHz Band (*white Paper*).